

WHAT IS CLAIMED IS:

1. A control device for controlling an elevator installation with a multiple deck car that simultaneously serves several floors of a building with one stop, the car having at least two car decks that are accessible at the same time at a main stopping point by way  
5 of different associated main stopping floors, the elevator installation further including a call registering device at the main stopping point by which a passenger can input a destination call representing his or her travel order for a desired destination floor, comprising:

a conversion unit adapted to be connected to the call registering device, said  
10 conversion unit responding to a destination call input by a passenger at the main stopping point and to destination floor travel orders already allocated to and/or demanded of the multiple deck car to ascertain which car deck of the multiple deck car is to be allocated to the passenger at the main stopping point in order to minimize the number of stops to be made by the  
15 multiple deck car; and

an indicating device connected to said conversion unit and being responsive to the ascertained car deck to indicate to the passenger at the main stopping point his or her allocated car deck and/or the main stopping floor associated with the allocated car deck.

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2. The control device according to claim 1 wherein said conversion unit further responds to a structure of the building, including different spacings between floors to be served by the multiple deck car, to ascertain which car deck is to be allocated.

25 3. The control device according to claim 2 wherein said conversion unit ascertains the car deck which is to be allocated in dependence on distances between the destination floors to be served.

4. The control device according to claim 1 wherein said conversion unit  
30 considers at which stop of the multiple car one of the car decks did not come to a stop at a floor previously directly served by the elevator installation and carries out the allocation in such a manner that the number of such stops is minimized.

5. The control device according to claim 2 wherein said conversion unit ascertains the car deck which is to be allocated to a destination call at the main stopping point dynamically on the basis of all destination calls registered or demanded at the main  
5 stopping point for this elevator and/or on the basis of destination calls registered or demanded at the entire elevator installation without consideration of whether a floor, the number of which is divisible by the number of car decks of the multiple car, was driven to by a car deck at each stop.

10 6. The control device according to claim 1 wherein the multiple deck car has two car decks and said conversion unit allocates to each of the car decks passengers with even and uneven numbered destination floors in order to minimize the number of stops.

7. The control device according to claim 1 including a call registration device  
15 adapted to be located at a main stopping point of the elevator installation, said call registration device including said indicating device.

8. The control device according to claim 1 wherein the elevator installation has a plurality of elevators and said conversion unit ascertains a one of the elevators and an  
20 associated deck to be allocated in dependence on the divisibility of a number of the destination floor by the deck number such that the number of overall stops is minimized and said indicating device indicates the allocated elevator and the allocated car deck and/or the main stopping floor from which the allocated car deck is accessible.

25 9. The control device according to claim 1 wherein said conversion unit includes a comparison device that compares possible allocations of the destination call to the car decks as to whether a specific allocation with consideration of travel orders already allocated to the multiple car gives by comparison to another allocation a lesser number of stops in the case of travel, which starts subsequently from the main stopping point, for  
30 execution of the travel orders allocated to the multiple car.

10. The control device according to claim 9 wherein said conversion unit includes a selecting device which responds to a comparison of two possible allocations by said comparison device to select that allocation which gives the lesser number of stops.

- 5           11. A method of controlling an elevator installation with a multiple deck car for simultaneously serving more than one floor by one stop, wherein a main stopping point with different main stopping floors is driven to in normal operation in such a manner that each car deck of the multiple deck car stops at a main stopping floor, wherein destination calls of passengers are registered at the main stopping point, comprising the steps of:
- 10           a) registering a destination call at the main stopping point; and
- b) allocating the destination call to one of the car decks in dependence on all the destination calls registered at the main stopping point and/or in dependence on destination calls registered at other floors and/or in dependence on the structure of the building.

15           12. The method according to claim 11 wherein said step b) is performed dynamically without consideration of the divisibility of the number of the destination floor by the number of the car deck of the multiple deck car.

20           13. The method according to claim 11 including a step of indicating to the passenger at the main stopping point the allocated car deck and/or an associated allocated main stopping floor.

              14. The method according to claim 12 wherein when the elevator installation  
25 includes several multiple deck elevators, said indicating step is performed by displaying to the passenger both the allocated car deck and the associated allocated main stopping floor.

              15. The method according to claim 11 wherein immediately after performing said  
30 step b), performing a step of indicating to the passenger at the main stopping point the allocated elevator and the car deck thereof or the corresponding main stopping floor.

16. The method according to claim 11 said step b) is performed in accordance with whether a specific allocation with consideration of travel orders already allocated to the multiple deck car results in a smaller number of stops relative to another allocation in the case of travel which starts subsequently from the main stopping point.

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